The North Residential Village (NRV) is a four-phase project to replace existing dormitories with a new living-learning environment for Case students, faculty, and neighbors.

Phase 1 includes three residential buildings, a garage, and new athletic fields. All of these buildings incorporate sustainable-design principles. A particularly innovative feature is the use of a groundwater recharge system under the sports fields to limit the amount of storm water that would otherwise discharge to the local utilities’ combination sanitary/storm treatment plants.

- Providing independent apartment living for upperclassmen within an academic community
- Promoting interaction between students, faculty and neighbors
- Integrating sustainable architecture into a comfortable, beautiful campus
- Developing new technologies integral to student life and academics
- Advancing environmentally responsible practices in planning, design, construction, living and learning
Phase 1 Village:
North, South and Middle Residential buildings

Independent, environmentally responsible Living-Learning for upperclassmen

• Designed to meet the standards for LEED™ SILVER rating
• One- to seven-bedroom apartments for 700 students, grouped into seven houses in three buildings
• Faculty apartments
• House commons, including common living room, dining room, study and music practice rooms, bicycle storage, laundry and recycling facilities
• Village commons, including Cafe, convenience store, and Fitness Center
• High-performance building exterior
• Energy-efficient heating, cooling systems
• Daylight and motion detectors to control light fixtures
• Green building materials
Phase 1 Parking and Athletic Facilities

- 1200-car Parking Garage, replacing several existing surface lots
- Combination football-soccer field with state-of-the-art press box & bleachers
- Facilities for track and field
- Softball and baseball fields
- Tennis courts
- Locker and bathroom facilities
- Innovative groundwater-recharge system
- Ongoing monitoring and research into groundwater hydraulics
- High-efficiency irrigation systems
- Reduced impact on City and Regional water systems

Future Phases

Future phases will include freshman and sophomore housing, communal dining and living areas to foster collegiate living, and a new Field House and Fitness center.
Building, Living and Learning Green: Thinking differently about building for housing

The NRV integrates the design of a green building complex into the living and learning environment of the students and faculty, and expand educational and research opportunities for the greater community. The sum of all proposed energy-conservation measures will likely reduce energy consumption by as much as 30–40% annually compared with conventional construction.

**Education**

- Educational lobby displays describing all green building measures
- Monitoring devices to compare the NRV to other campus buildings
- Opportunities for research by students, faculty and others into innovative systems such as groundwater recharge and future fuel cells and cogeneration
- Ongoing experience and feedback to guide the designs of Phases 2, 3 and 4

**High-Performance Building Envelope to reduce heating and cooling demand**

- Well-insulated walls with a continuous air barrier to minimize infiltration (R20)
- High-performance windows and glazing with integral sunshades
- Reduction of annual energy consumption by approximately 10–20%
- Reduction of peak heating and cooling demand by 30–40%

**Green Materials**

- Recycled or recycled-content materials, such as steel, linoleum and carpet
- Local materials such as brick, slate and poured-in-place concrete
- Recycling of construction materials
- Recyclable-collection areas in every house
**Lighting design and control to reduce energy consumption**

- Large windows and sun shelves to bounce light throughout rooms
- Daylight monitors to take advantage of large windows in Cafe and Living Rooms
- Motion detectors to monitor lighting in group studies, bathrooms, corridors and other rooms where use is intermittent

**Indoor Air Quality**

- Fresh-air intakes at roof level, far from exhaust-air streams
- Low VOC (volatile organic compound) selections for paints, carpets and furniture, glues and sealants
- Protection of ductwork to reduce/eliminate construction dust during construction
- Flushing of air systems and replacement of filtration media prior to occupancy

**Water Conservation**

- Collection of roof and surface storm water for distribution through a groundwater-recharge system under playing fields to recharge groundwater and reduce demand on local treatment plants
- Low-flow sink fixtures and showerheads to reduce utility water consumption by more than 40% over conventional buildings

**Efficient Heating and Cooling Systems**

- Heat-recovery system at each house to recover the sensible heat of the lavatory and kitchen exhaust systems
- Central fan coil units in each apartment, with occupant control
Project Team:

Owner: Case Western Reserve University
Architect: Goody Clancy
Landscape Architect: Michael Van Valkenburgh Associates
Engineers: Zaldastani Engineers
    Bard, Rao and Athanas Consulting Engineers
    Neff & Associates
Sustainability Consultants: Steven Winters Associates,
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